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FairRoot : the FAIR simulation and analysis framework

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The experiments design studies at FAIR are done using a ROOT based simulation and analysis framework : FairRoot. The framework is using the Virtual Monte Carlo concept which allows to perform simulation using Geant3, Geant4 or Fluka without changing the user code. The same framework is then used for data analysis. An Oracle database with a build-in versioning management is used to efficiently store the detector geometry, materials and parameters. A generic track follower based on Geane has been implemented which allows precise and fast tracking algorithm development. Moreover a geometry interface which uses different input format (ascii, root , oracle and step format) is also implemented. The status and results of the main FAIR experiments, CBM (compressed baryonic matter) and PANDA (antiproton annihilation at the high energy storage ring) design studies will be presented as well as the comparison between different Monte Carlo transport code.

Submitted on behalf of Collaboration (ex, BaBar, ATLAS)

GSI IT

Summary

The experiments design studies at FAIR are done using a ROOT based simulation and analysis framework : FairRoot. The framework is using the Virtual Monte Carlo concept which allows to perform simulation using Geant3, Geant4 or Fluka without changing the user code. The same framework is then used for data analysis

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